

# Incident Action Plan

**Bulk Chemicals** 

## **Incident Objectives (ICS 202)**

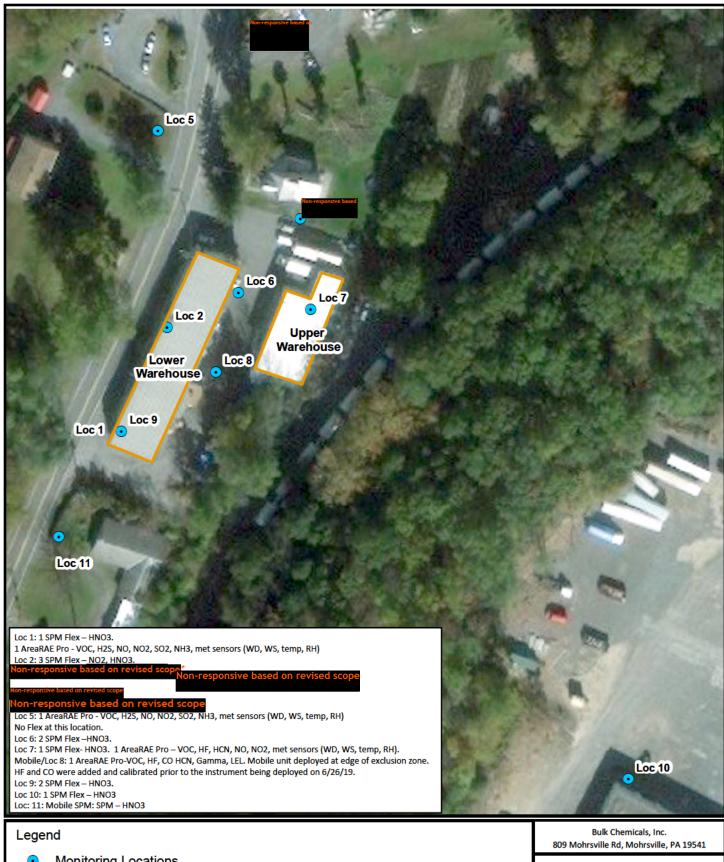
1	Incident Name	Bulk Chemicals		
2	Operational Period	06/28/2019-06/30/2019		
3	Objectives	<ul> <li>Ensure Health and Safety for all site personnel.</li> <li>Ensure human health and the welfare of the environment are protected off site.</li> <li>Establish site stabilization priorities – transferring the nitric acid out of the open top tank, atmosphere stabilization, remove the remaining product on the floor, and identifying any new leaking containers within the racks.</li> <li>Ensure community outreach information is regular, routine, and updated as appropriate.</li> <li>Ensure site personnel evacuation procedures are established.</li> <li>Ensure off site evacuation planning is regular, communicated appropriately and coordinated with local officials.</li> <li>Begin discussing the partial opening of Mohrsville Rd.</li> </ul>		
4	Operational Period Command Emphasis	<ul> <li>Confirming daily site activities during morning meetings.</li> <li>Plan for the transfer of the nitric acid into 350 gallon stainless steel totes.</li> <li>Evaluate SDS's before handling any product.</li> <li>Stabilizing the facility atmosphere in order to downgrade PPE.</li> <li>Securing the site for the weekend.</li> </ul>		
	General Situational Awareness	Facility evacuation contingency will be discussed before each entry. Daily weather reports will be evaluated.		
	Site Safety Plan Required?	Yes		
5	Location of Safety Plan	Forward Command Post (Lewis Environmental) EPA Command Post (Weston Solutions)		
6	ICS Forms/Documents	<ul> <li>ICS 205A- Communications List</li> <li>ICS 206- Medical Plan</li> <li>Figure 1- Monitoring Locations</li> <li>EPA ERT Air Monitoring Summary</li> <li>Figure 2- Lower Warehouse Layout Map</li> <li>Tote Inventory</li> <li>EPA Fact Sheet</li> <li>Evacuation Plans</li> </ul>		
7	Prepared By:	Non-responsive based on revised scop		
8	Approved By:	Kelley Chase		
	1	· · ·		

## **Communications List (ICS 205A)**

	CONTACT LIST	
	Bulk Chemicals	
	06/28/2019-06/30/2019	
	Bulk Chemical Inc.	Non-responsive based on revised scope
Harry Adams	Lead Contact	
Jose Rivera	Chemist	
Steve Rohrbach	General Support	
Mike Hill	General Support	
Justin Gigli	Forklift Operator	
Non-responsive based on revised scope	Lewis Environmental Lead	
Shannon Lonergan	Antea Group	
	EPA	
Kelley Chase	On-Scene Coordinator	
Charlie Fitzsimmons	On-Scene Coordinator	
Chris Guzzetti	On-Scene Coordinator	
Mike Hoppe	EPA Environmental Response Team	
Megan Keegan	EPA Community Involvement Coordinator	
Non-responsive based on revised scope	EPA Contractor (START)	
	EPA Contractor (SERAS)	
	PA DEP	Non-responsive based on revised scope
Walter Bair	DEP Environmental Response Team	
Chris Bosnyak	DEP Environmental Response Team	
	US COAST GUARD	
Edward Primeau	Industrial Hygienist Atlantic Strike Team	Non-responsive based on revised scope
Adam Long	Response Technician Atlantic Strike Team	

## **Medical Plan (ICS 206)**

1	Incident Name	Bulk Chemicals
2	Operational Period	06/28/2019-06/30/2019
		Schuylkill Valley EMS
	Transportation	26 E. Wall St.
	Ambulance	Leesport PA 18533
3		610-926-3858
		Penn State Health- St. Joseph's Medical Center
		2500 Bernville Rd.
		Reading, PA 19605
		610-378-2000
		Reading Hospital Tower Health-Trauma 1
		420 South 5 <sup>th</sup> Ave
		West Reading, PA 19611
4	Hospitals	484-628-8000
5	Prepare By:	Non-responsive based on revised scope
6	Approved By:	Kelley Chase



Monitoring Locations



**Buildings** 



Coordinate System: WGS84 UTM Zone 18N Feet

50 100 Feet

Figure 1 Air Quality **Monitoring Locations** 

Contract: EP-S3-15-02 Prepared: 6/24/2019







#### EPA ERT Air Monitoring Summary: Bulk Chemicals Response

On June 9, 2019, approximately 2200 gallons of 62% nitric acid was released onto the ground from a storage tank due to an equipment failure at the Bulk Chemicals facility, located in Shoemakersville, Berks County, PA. The spill resulted in a fire, which compromised a water treatment tank and is now leaking treated waste water.

ERT was activated June 11, 2019 by OSC Chase, to perform air monitoring for acid gases and compounds that could result due to the acid release, including Nitric Acid, Hydrogen Fluoride, Hydrochloric Acid and oxidizers, at and around the Bulk Chemicals facility.

#### June 26-27, 2019

No observations for HNO3 were noted at any of the perimeter monitoring locations (3,4 and 10). HNO3 was not observed at on- site Location 7. HNO3 monitoring with SPM only noted a few observations within the Lower Warehouse at Locations 2, 6, and 9 as high as 0.27 ppm as an instantaneous observation at Location 2. Location 1 had one observation at 0.01ppm between 1122am and 1126am.

VOC concentrations varied during the day, but were all less than 605 ppb with the exception of Location 7 where VOCs rose to ~1ppm during the overnight hours inside the Upper Warehouse. NO was observed at Locations 1 and 5 peaked as high as 6 ppm during daylight hours. Note that NO occurs naturally, which contribute to ambient readings. Readings above background were observed at Location 8, but these were attributable to the unit placed in direct sunlight.

Loc 1: (Location 1-South of Lower Warehouse): 40.4710390, -75.9718230

Loc 2: (Location 2-Lower Warehouse Interior West Side): 40.4712590, -75.9716770

Note: The tubing of these instruments is inside the building

#### Non-responsive based on revised scope "

This location was moved to be closer to the Non-responsive based on revised scope

#### Non-responsive based on revised scope

Loc 5: (Location 5-West of Bulk Chemical): 40.4717100, -75.9716900

Loc 6: (Location 6-East of Lower Warehouse): 40.47116, -75.97119

Loc 7: (Location 7-Upper Warehouse Interior): 40.471277, -75.971202 (approximate, AreaRAE is indoors)

Loc 8: (Mobile location to be used near work area): 40.4711510, -75.9715050

Loc 9: (Location 9-Lower Warehouse Interior South Side: 40.4710230, -75.9719340

Note: The tubing of these instruments is inside the building

Loc 10: Royal Trucking: 40.4702163, -75.9702364

Moved: Loc 11: Mobile SPM: South of Lower Warehouse on Mohrsville Rd: 40.470623, -75.972054

#### Monitoring Equipment at each Location

Loc 1: 1 SPM Flex – HNO3.

1 AreaRAE Pro - VOC, H2S, NO, NO2, SO2, NH3, met sensors (WD, WS, temp, RH)

Loc 2: 3 SPM Flex – NO2, HNO3. The individual mineral acids all react in a similar fashion with the chemcassette, just at different concentrations. The NO2 SPM Flex will respond if there are any oxidizers present.

Non-responsive based on revised score
Non-responsive based on revised scope

#### Non-responsive based on revised scope

#### Non-responsive based on revised scope

#### Non-responsive based on revised scope

Loc 5: 1 AreaRAE Pro - VOC, H2S, NO, NO2, SO2, NH3, met sensors (WD, WS, temp, RH) No Flex at this location.

Loc 6: 2 SPM Flex –HNO3.

Loc 7: 1 SPM Flex- HNO3. 1 AreaRAE Pro – VOC, HF, HCN, NO, NO2, met sensors (WD, WS, temp, RH).

Mobile/Loc 8: 1 AreaRAE Pro-VOC, HF, CO HCN, Gamma, LEL. Mobile unit deployed at edge of exclusion zone. HF and CO were added and calibrated prior to the instrument being deployed on 6/26/19. Loc 9: 2 SPM Flex – HNO3.

Loc 10: 1 SPM Flex – HNO3

Loc: 11: Mobile SPM: SPM – HNO3

## BULK CHEMICAL 10-Minute TWA ALARMS BY LOCATION

ALAIMIS D	Y LOCATIO	711		T	
		Alarm Level			Alarm Level
Location	Chemical	(ppm)	Location	Chemical	(ppm)
1-Flex	HNO3	0.16	5-AR	VOC	none set
1-AR	VOC	none set		H2S	5.0
	H2S	5.0		NO	12.5
	NO	12.5		NO2	1.5
	NO2	1.5		SO2	1.0
	SO2	1.0		NH3	12.5
	NH3	12.5			
2-Flex	HNO3	0.16	6-Flex	HNO3	0.16
	NO2	1.5			
Non-responsive based on re			7-Flex	HNO3	0.16
non responsive based on te	Non-responsive based o	0.16	7-AR	VOC	none set
		0.5		HF	1.0
		none set		HCN	2.5
		5.0		NO	12.5
		12.5		NO2	1.5
		1.5	8-AR	VOC	none set
		1.0		LEL	None set
		12.5		HCN	2.5
		none set		Gamma	None set
Non-responsive bas	Non-responsive bas	0.16		HF	1.0
		none set		CO	None set
		5.0	9-Flex	HNO3	0.16
		12.5	10-Flex	HNO3	0.16
		1.5			
			11- Mobile		
		1.0	SPM	HNO3	0.16
		12.5			

#### Alarm Levels

Analyte	CAS Number	Range	Resolution	Instrument	Project Action Levels
Nitric acid (HNO3)	7697-37-2	0.02-20 ppm	0.05 ppm	SPM Flex	0.16 ppm (10-min AEGL-1) – perimeter locations 1.0 ppm (1/2 TLV TWA) – interior location
With acid (THVO3)	1097-37-2	0.2-6 ppm	0.1 ppm	SPM	0.3 ppm (SPM)
Hydro con Elyanida (HE)	7664-39-3	0.02-20 ppm	0.5 ppm	SPM Flex	1.0 ppm (10-min AEGL-1) – Non-responsive based on revised st
Hydrogen Fluoride (HF)	/004-39-3	0.5-10 ppm	0.5 ppm	AreaRAE Pro	0.25 ppm (1/2 TLV TWA) –reference
Hydrogen chloride (HCl)	7647-01-0	0.02-20 ppm	0.03 ppm	SPM Flex	1.8 ppm (10-min AEGL-1) — ton-responsive based on revised 1.0 ppm (1/2 TLV STEL) — reference
VOCs as 1,4-dioxane	123-91-1	0 to 2,000 ppm	0.1 ppm	AreaRAE Pro	10 ppm (1/2 TLV TWA) –
Nitric oxide (NO)	10102-43-9	0-250 ppm	0.5 ppm	AreaRAE Pro	12.5 ppm (1/2 TLV TWA)
Sulfur dioxide (SO2)	7446-09-5	0-20 ppm	0.1 ppm	AreaRAE Pro	1.0 ppm (1/2 TLV TWA) –
Ammonia (NH3)	7664-41-7	0-100 ppm	1.0 ppm	AreaRAE Pro	12.5 ppm (1/2 TLV TWA)
Hydrogen sulfide (H2S)	7783-06-4	0-100 ppm	0.1 ppm	AreaRAE Pro	5.0 ppm (1/2 TLV TWA) –
		0-20 ppm	0.1 ppm	AreaRAE Pro	1.5 ppm (1/2 TLV TWA) –
Nitrogen dioxide (NO2)	10102-44-0	0.03-10 ppm	0.05 ppm	SPM Flex	1.5 ppm (1/2 TLV TWA) –most locations 0.5 ppm (10-min AEGL-1)-perimeter CP location
II-1	74-90-8	0-50 ppm	1 ppm	AreaRAE Pro	2.5 (10 'AECI 1) Non-responsive based on revite
Hydrogen cyanide (HCN)		0.2-30 ppm	0.5 ppm	SPM Flex	2.5 ppm (10-min AEGL-1) –

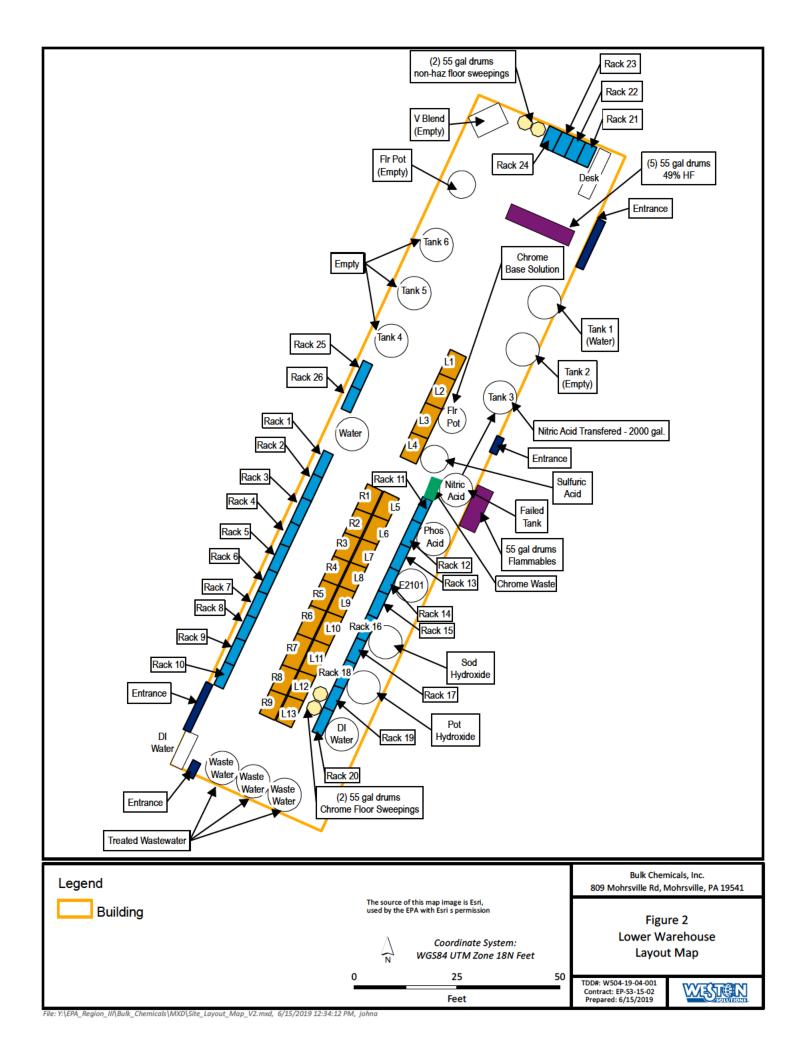
TLV TWA – Threshold Limit Value Time Weighted Average

TLV STEL – Threshold Limit Value – Short Term Exposure Limit

AEGLs are calculated for five relatively short exposure periods – 10 minutes, 30 minutes, 1 hour, 4 hours, and 8 hours – as differentiated from air standards based on longer or repeated exposures. AEGL "levels" are dictated by the severity of the toxic effects caused by the exposure, with Level 1 being the least and Level 3 being the most severe.

#### AEGL 1

• Notable discomfort, irritation, or certain asymptomatic non-sensory effects. However, the effects are not disabling and are transient and reversible upon cessation of exposure.



#### BULK CHEMICAL, INC. TOTE INVENTORY STATUS As of 6/27/19

LOCATION	CHEMICAL NAME	DATE TRANSFERRED	TOTE STATUS/DETAILS	FINAL STORAGE LOCATION
L-l	S-97 HSU SOLUTION	06/18/19	~50 gal found in tote; Product pumped and transferred	Upper Warehouse
L-2 (bottom)	LIQUID CHROMIC ACID 40%	06/20/19	Pumped and removed	Upper Warehouse
L-2 (top)	LIQUID CHROMIC ACID 40%	06/18/19	Product pumped and transferred (Will move to upper warehouse 6/19/19)	Upper Warehouse
L-3 (bottom)	R6A	06/20/19	Full tote leaked. Empty tote removed.	Upper Warehouse
L-3 (top)	BNP275	06/20/19	Pumped and transferred	Upper Warehouse
L-4 (bottom)	LIQUID CHROMIC ACID 40%	06/20/19	Pumped and transferred	Upper Warehouse
L-4 (middle)	KOH WATER	06/15/19	Product pump transfered out- (tote left in place). (Upper Warehouse)	Upper Warehouse
L-4 (top)	POLYVINYL ALCOHOL SOLUTION (SELVOL 08-125)	06/15/19	8" product pump transfered to outside tote, 6" product gravity drained Approx 14" total. Tote removed from Lower Warehouse (Upper Warehouse)	Upper Warehouse
L-5	N-METHYL 2-PYRROLIDONE (FLAMMABLE)	06/16/19	Product pumped and transferred (Upper Warehouse)	Blandon Warehouse
L-6	AMMONIUM HYDROXIDE 22 BE	06/19/19	Due to good condition and stability of tote, tote will not be pumped but transferred once decon	Upper Warehouse
L-7 (bottom)	GLYCOL ETHER EB	06/19/19	Product pumped and transferred	Upper Warehouse
L-7 (top)	GASTAL L-61	06/19/19	~ 5 gals in tote; pumped and transferred	Upper Warehouse
L-8 (bottom)	AERO DISP W7512S	06/20/19	~ 30 gals pumped and transferred	Upper Warehouse
L-8 (top)	NAOH 50%	06/20/19	Pumping started 6/19/19 finished 6/20/19	Upper Warehouse
L-9 (bottom)	GASTAL 702	06/21/19	Identified 6/20/19, needs to be pumped. Pumped and transferred.	Upper Warehouse
L-9 (top)	POTASSIUM HYDROXIDE, 45%	06/21/19	started 6/20/19 will finish 6/21/19. Pumped and transferred.	Upper Warehouse
L-10 (bottom)	E-CLPS® 2101	06/21/19	Pumped and transferred	Upper Warehouse
L-10 (top)	BULK KLEEN® 769	06/21/19	Pumped and transferred	Upper Warehouse
L-11 (bottom)	N-METHYL 2-PYRROLIDONE (FLAMMABLE)	06/22/19	Pumped and transferred	Upper Warehouse
L-11 (top)	WASTE WATER	06/22/19	Pumped and transferred, was marked L-12 on previous lists.	Upper Warehouse
L-13 (bottom)	WASTE WATER	06/23/19	Pumped and transferred	Upper Warehouse
L-13 (top)	FLOOR SWEEPING (2 X 55 GAL)	06/23/19	Picked and transferred	Upper Warehouse
R-1	N-METHYL 2-PYRROLIDONE (FLAMMABLE)	06/16/19	Product pumped out and bulked with L5 product (Upper Warehouse)	Blandon Warehouse
R-2 (bottom)	SURFONIC NP- 95	06/16/19	20% of full tote left pump transfered out (leaked)	Blandon Warehouse
R-2 (top)	NICKEL NITRATE SOLUTION	06/16/19	40% product in tote- pump transfered out (Upper Warehouse)	Upper Warehouse
R-3 (bottom)	BULK DRAW® 480RLX	06/17/19	Some product still left in tote, will pump the rest out on 6/19/19	Upper Warehouse
R-3 (top)	WASTEWATER	06/16/19	Empty tote	Upper Warehouse
R-4 (bottom)	FLUOTITANIC ACID 60% (HF COMPOUND)	06/17/19	Product pumped out; tote is damaged and will be left in place	Upper Warehouse
R-4 (top)	PHOSPHORIC ACID	06/17/19	Product pumped and transferred	Upper Warehouse
R-5 (bottom)	HEXAFLUORZIRCONIC ACID	06/18/19	Product pumped and transferred	Upper Warehouse
R-5 (top)	STEPANATE SXS	06/17/19	Product pumped and transferred	Upper Warehouse
R-6 (bottom)	SULFURIC ACID 50%	06/18/19	Product pumped and transferred	Upper Warehouse
R-6 (top)	GLUCONIC ACID 50% FCC	06/18/19	Product pumped and transferred	Upper Warehouse
R-7	BULK BOND® 315MU and PHOSPHORIC ACID (2 x 55 GAL)	06/22/19	Picked and transferred, one drum of each.	Upper Warehouse
R-8	WASTEWATER	06/24/19	Pumped and transferred	Upper Warehouse
R-9 (bottom)	WASTEWATER	06/24/19	Pumped and transferred	Upper Warehouse
R-9 (top)	FLUOTITANIC ACID 60% (HF COMPOUND)	06/21/19	6/21/19 pumped and transferred, half of tote remained was full. (Leaker)	Upper Warehouse
	ADDITIONAL INV	ENTORY REM	OVAL	
Enterance	FERRIC NITRATE (1 x 55 gal)	6/14/2019	(Upper Warehouse)	Upper Warehouse
Enterance	Non-responsive based on revised scope. Non-responsive based on revised scope.	6/14/2019	Non-responsive based on revise Non-responsive based on revise	Non-responsive based
Enterance	HYDROGEN PEROXIDE (1 x 55 gal)	6/14/2019	(Upper Warehouse)	Blandon Warehouse
Enterance	TERGITOL (1 x 55 gal)	6/14/2019	(Upper Warehouse)	Upper Warehouse
Enterance	HYDROFLUORIC ACID 49% (4 1/2 x 55 gal)	6/14/2019	4 full drums, 1 partial drum	Blandon Warehouse
Rack 16 Level 1	POTASSIUM FERRIC CYANIDE (310lbs)	06/23/19	poly bags loaded into a poly drum	Upper Warehouse
Rack 16 Level 1	SODIUM FLUORIDE (2 bags)	06/23/19	bags loaded into poly drum	Upper Warehouse
Rack 16 Level 1	POTASSIUM HEXAFLUOZIRCANATE	06/23/19	drum in good condition.	Upper Warehouse
Rack 16 Level 1	POTASSIUM FLUOBORATE	06/23/19	Boxes in good condition.	Upper Warehouse
Rack 10 Level 1	CHROME WASTEWATER (2 totes)	06/24/19	2 totes of chrome waste	Upper Warehouse

NOTES	

PUMPED OUT/TRANSFERRED

Tote Location designated with an L indicates tote is located on the left side of the building when entered from the north.

Tote location designated with an R indicates tote is located on the right side of the building when entered from the north.

## **BULK CHEMICALS, INC. SITE**

COMMUNITY UPDATE | June 28, 2019

### U.S. EPA continues response oversight at Bulk Chemicals, Inc.

The Bulk Chemicals, Inc. Site is a chemical facility located on Mohrsville Road in Shoemakersville, Perry Township. On Sunday, June 9, the Shoemakersville Fire Company, Berks County Department of Emergency Services and the Pennsylvania Department of Environmental Protection (PADEP) responded to a spill of nitric acid at the facility. On Monday morning, June 10, the Shoemakersville Fire Company returned to respond to a fire in the building where the nitric acid was released. Some local residents were asked to evacuate their homes to ensure their health and safety during these events. The U.S. Environmental Protection Agency (EPA) arrived on Site on June 10 at the request of PADEP to provide assistance. Since arriving on the scene, EPA and PADEP have been coordinating with local agencies and Bulk Chemicals, Inc. (BCI) to assess conditions at the facility and are overseeing site stabilization and cleanup efforts being conducted by BCI and its contractors. EPA is also conducting air quality monitoring to ensure the safety of on-site workers and the nearby community.

## What is going on at the Site?

Since the last update, the response team has made significant progress to stabilize conditions at the BCI facility. The response team transferred chemicals from the containers that were damaged by the spill and fire to new containers. The response team is now focused on the cleanup and safe disposal of the damaged containers and waste. Upcoming work includes transferring the remaining nitric acid from temporary storage containers to permanent containers. EPA will continue to conduct continuous air monitoring both within the facility and around the perimeter to ensure that air quality is protected for workers and local residents. Since the monitoring began on Tuesday, June 11, air quality outside the facility continues to be safe for residents. EPA also sampled five residential drinking water wells in the immediate vicinity of the facility. Preliminary sampling results showed no impact from the spill to these drinking water wells.

## What can I expect?

- Partial or full closure of Mohrsville Road (except local traffic) for 1-3 more weeks.
- EPA workers and contractors in and around the BCI facility, dressed in personal protective equipment, for 1-3 more weeks.
- Increased noise, truck traffic, and equipment on Mohrsville Road.
- Continuous air monitoring by the EPA to ensure the health and safety of workers and local residents.
- Coordination between EPA, PADEP, and local officials with updates to the community.

#### **QUESTIONS?** Contact Us!





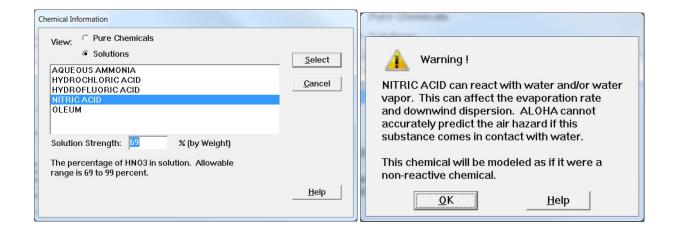
### Shoemakersville Warehouse

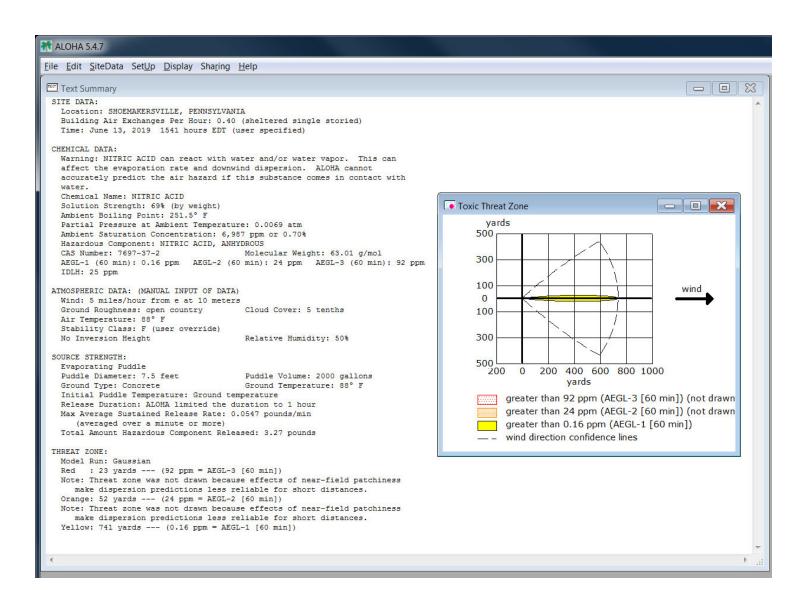
## Nitric Acid Solution, 2000 Gallon Container

## **Worst Case Atmospheric Dispersion Model:**

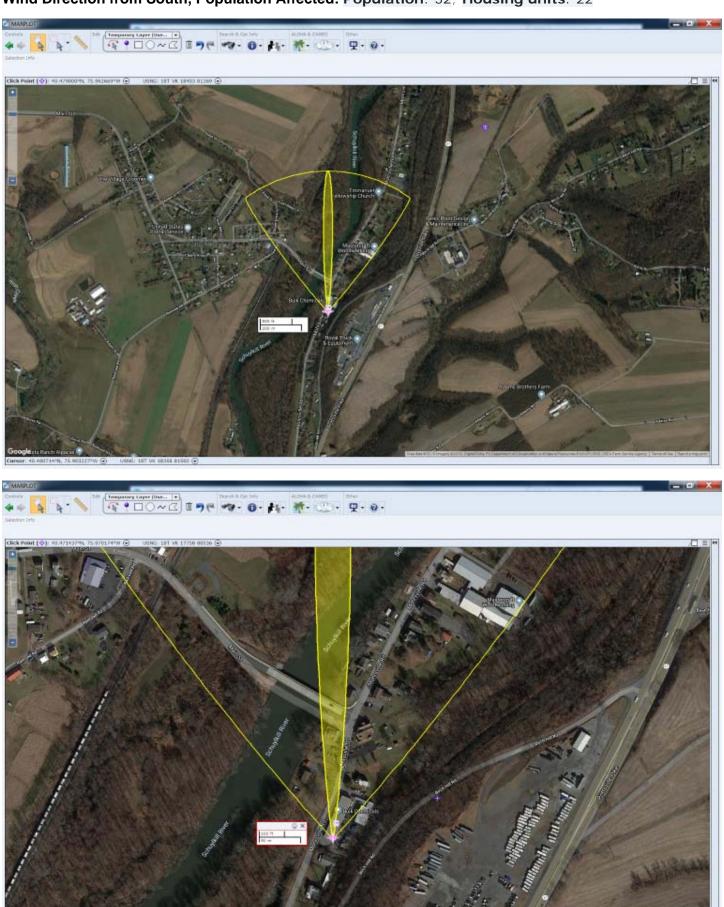
#### Assumptions / Limitations:

- Nitric Acid solution is 69% HNO3 by weight (lowest % that ALOHA will model).
- This model calculates that dispersion near the release source is unpredictable; therefore, the threat zones for AEGL-2 (orange, 24.0 ppm) and AEGLE-3 (red, 92.0 ppm) are not drawn by ALOHA because effects of near-field patchiness make dispersion predictions less reliable for short distances.
- Atmospheric Stability Class is F (most stabile atmosphere, allowing release to travel farthest). General Conditions of Atmospheric Stability Class F include: wind 5 mph, temperature 85-90 degrees F, moderate cloud cover.
- ALOHA cannot accurately estimate a Threat Zone if this substance mixes with water. Nitric acid can react with water or water vapor, which can affect the evaporation rate and downwind dispersion. The below dispersion models assume this chemical is releasing in a non-reactive state.
- ALOHA only models for a puddle source for this mixture for example, if the tote leaks and creates a puddle.
- ALOHA does not model Threat Zones beyond 6.0 miles.
- ALOHA does not accommodate for a release inside a building. The below dispersion model depicts a threat zone created by a puddle of Nitric Acid in an open area (not a puddle inside a warehouse).
- The below scenario assumes that the entire 2000 gallon container is releasing all of its contents, creating a shallow puddle on a concrete surface.
- WARNING: ALOHA threat zones are based on AEGLs. Threat zones are modeled for planning purposes only. Air
  monitoring equipment and proper PPE are required to protect health and safety of responders on site and the
  general population.

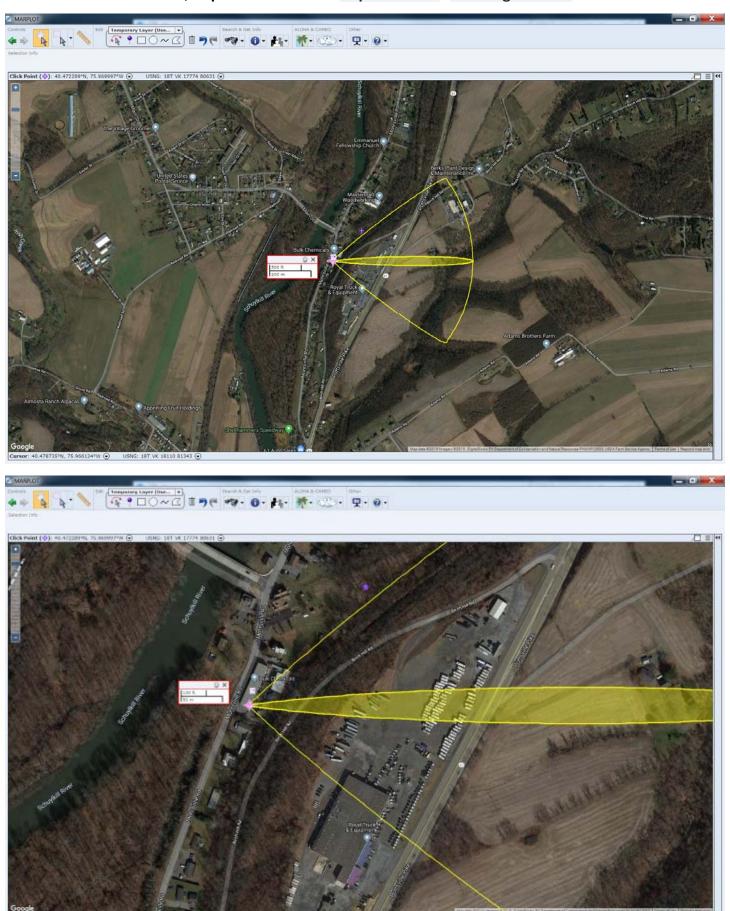




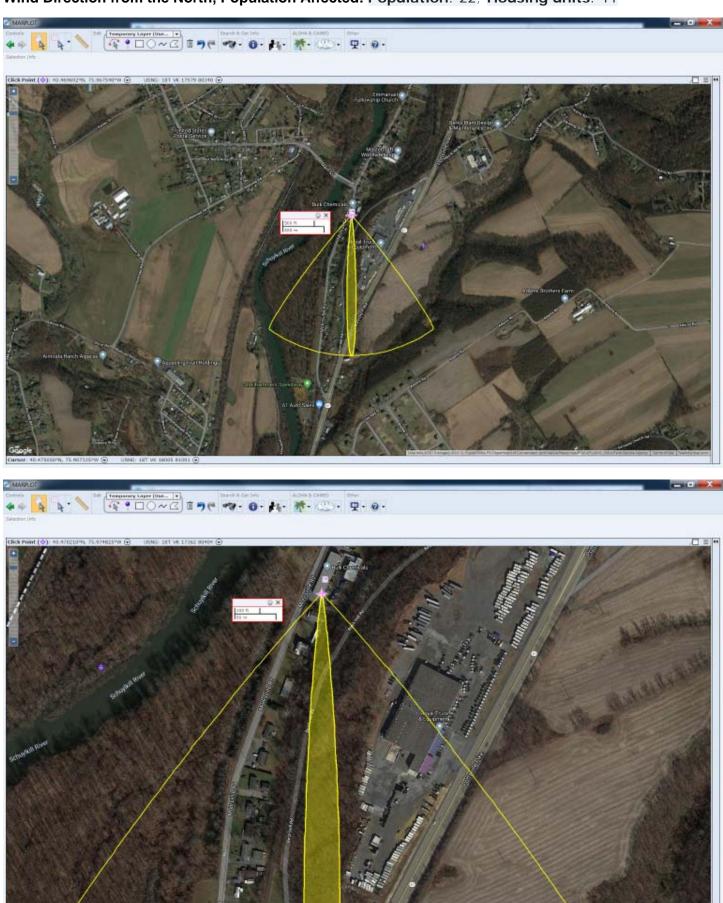
Wind Direction from South, Population Affected: Population: 52; Housing units: 22



Wind Direction from West, Population Affected: Population: 0; Housing units: 0



Wind Direction from the North, Population Affected: Population: 22; Housing units: 11



Wind Direction from Southeast, Population Affected: Population: 145; Housing units: 59

